

WHAT IS CLAIMED IS:

1. A recording medium residual amount detecting device for detecting information concerning a residual amount of recording medium, comprising:

5 external force applying means that applies an external force to a recording medium group in a thickness direction thereof; and

 external force detector that detects the external force applied to the recording medium group,

10 wherein the external force detector is disposed such that the recording medium group is set in a position between the external force applying means and the external force detector.

15 2. A recording medium residual amount detecting device according to claim 1, wherein the external force applying means applies voltage, vibration or impact to the recording medium group.

20 3. A recording medium residual amount detecting device according to claim 2, wherein when voltage is used as the external force, the external force applying means and the external force detector are composed of a first electrode capable of being in
25 contact with a front surface of the recording medium group and a second electrode capable of being in contact with a rear surface of the recording medium

group, and wherein the recording medium residual amount detecting device further comprises voltage applying means that applies a voltage between the first electrode and the second electrode.

5

4. A recording medium residual amount detecting device according to claim 1, wherein the information concerning a residual amount of recording medium is detected by comparing a signal stored in advance in a storage circuit corresponding to a residual amount, with a signal detected by the external force detector.

5. A recording medium residual amount detecting device according to claim 1, wherein the information concerning a residual amount of recording medium is information indicating a remaining number of the recording medium stacked or indicating that at least a predetermined number of sheets are remained.

20 6. A recording medium residual amount detecting device according to claim 1, further comprising warning means that issues, when the remaining number of the recording medium is equal to or less than a predetermined value, a warning indicating that the remaining number is equal to or less than the predetermined value.

7. An image forming apparatus provided with the recording medium residual amount detecting device as set forth in claim 1 and recording medium stacking means for stacking a recording medium group.

5

8. An image forming apparatus comprising detector that detects information concerning a residual amount of recording medium stacked in the image forming apparatus, wherein the information is
10 outputted as electronic information irrespective of presence or absence of the recording medium.

9. An image forming apparatus according to claim 8, wherein the information concerning a
15 residual amount of recording medium comprises information indicating a remaining number of the recording medium stacked or indicating that at least a predetermined number of sheets are remained.

20 10. An image forming apparatus according to claim 8, wherein the detector comprises:

external force applying means that applies voltage, vibration or impact as an external force to a recording medium group in a thickness direction
25 thereof; and

external force detector that detects the external force applied to the recording medium group,

the external force detector being disposed such that the recording medium group is set in a position between the external force applying means and the external force detector.

5

11. An image forming apparatus according to claim 8, wherein the information is outputted irrespective of whether the recording medium is used up or before the recording medium is not used up.

10

12. An image forming apparatus according to claim 8, wherein the electronic information comprises information which is displayed on a display part provided in the image forming apparatus or on a display of a computer connected with the image forming apparatus.

15

13. An image forming apparatus adapted for executing a process comprising steps of:

20

receiving an image forming command;

determining whether or not a residual amount of recording medium is sufficient enough to complete image formation in response to the image forming command; and

25

outputting when applicable, information indicating that the residual amount of recording medium is not sufficient enough to complete the image

formation.

14. An image forming apparatus according to claim 13, wherein the information is outputted on a
5 screen of a computer connected to the image forming apparatus.

15. A program which is executed by a computer connected directly or via a network with an image
10 forming apparatus, comprising steps of:

obtaining information concerning a residual amount of recording medium stacked in the image forming apparatus; and

displaying the information on a screen of the
15 computer.

16. A program according to claim 15, wherein the information is information indicating a remaining number of the recording medium or information
20 indicating that at least a predetermined number of sheets are remained.

17. A program according to claim 15, wherein the information is provided in a form of graphic or
25 character expressed visually to a user.

18. A program according to claim 15, further

comprising a step of displaying the information for every image forming apparatus with respect to plural image forming apparatuses connected directly or indirectly with the computer.

5

19. A program comprising steps of:

obtaining information concerning plural image forming apparatuses connected directly or indirectly with a computer;

10 allocating tasks of image formation process to be executed by the plural image forming apparatuses in response to an image forming command from a user; and

issuing an image formation starting command to
15 each of the plural image forming apparatuses having an allocated task of the image formation process.

20. An information detecting apparatus for detecting information of presence or absence of
20 recording medium, comprising;

external force applying means that applies an external force to a recording medium group in a thickness direction thereof; and

external force detecting means that detects the
25 external force applied to the recording medium group, wherein the external force detector is disposed such that the recording medium group is set in a

position between the external force applying means
and the external force detector.